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Complete Summary

GUIDELINE TITLE

Practice parameter: early detection of dementia: mild cognitive impairment (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology.

BIBLIOGRAPHIC SOURCE(S)

Petersen RC, Stevens JC, Ganguli M, Tangalos EG, Cummings JL, DeKosky ST. Practice parameter: Early detection of dementia: Mild cognitive impairment (an evidence-based review): Report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2001 May 8;56(9):1133-42. [47 references]

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SCOPE

DISEASE/CONDITION(S)

- Dementia
- Alzheimer´s disease

GUIDELINE CATEGORY

Diagnosis
Screening

CLINICAL SPECIALTY

Family Practice
Geriatrics
Internal Medicine

Neurology
Psychiatry

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To determine whether screening different groups of elderly individuals in a general or specialty practice is beneficial in detecting dementia

TARGET POPULATION

Persons with mild cognitive impairment

INTERVENTIONS AND PRACTICES CONSIDERED

General Cognitive Screening Instruments

1. Mini-Mental State Examination (MMSE)
2. Kokmen Short Test of Mental Status
3. Memory Impairment Screen
4. 7-Minute Screen

Brief Focused Screening Instruments

1. Clock Drawing Test
2. Time and Change Test

Neuropsychologic Batteries

1. Neuropsychologic Battery
2. Mattis Rating Scale
3. Halifax Mental Status Scale
4. Fuld Object Memory Test

Informant-Based Instruments

1. Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)
2. Clinical Dementia Rating (CDR)
3. Blessed Dementia Rating Scale (BDRS)

MAJOR OUTCOMES CONSIDERED

- Rates of conversion to dementia for persons classified as having mild cognitive impairment
- Sensitivity and specificity of screening instruments for detection of dementia/cognitive impairment

- Positive and negative predictive values of screening instruments for detection of dementia/cognitive impairment

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Panel selection. The Quality Standards Subcommittee identified two team leaders to select committee members to participate in the creation of one or more practice parameters on dementia. The committee determined that three practice parameters were needed: Detection of Dementia, Diagnosis of Dementia, and Management of Dementia. The three practice parameter committees coordinated their literature searches to include key words such as specific forms of dementia and databases that interrelate the three topics. All panel members provided comprehensive disclosures of any real or potential conflicts of interests.

Literature review process. Search terms. Key and index words used were as follows: dementia, pre-senile dementia, senile dementia, vascular dementia, Alzheimer´s disease, early detection, early diagnosis, early stages, early symptoms, health screening, psychologic screening inventory, geriatric assessment, longitudinal studies, retrospective studies, mild cognitive impairment, Mini-Mental State Examination, cognitive impairment, cognitive assessment, and memory tests.

Databases. MEDLINE, EMBASE, Current Contents, Psychological Abstracts, Psych Info, Cochrane Database, and CINAHL Database were searched.

Inclusion/exclusion criteria and process. For the searches, the authors of the guideline sought studies in all languages; however, other types of studies were limited to English only. Studies were restricted to human subjects. Longitudinal prospective studies that evaluated mildly impaired subjects and followed them to detect cognitive impairment from 1991 to early 2000 were reviewed. The authors of the guideline also examined reviews and their bibliographies published from 1994 to November 1999 to identify additional articles. In addition, the authors of the guideline evaluated studies of clinical testing instruments that could be used to identify subjects with cognitive impairment.

Number and disposition of articles. The authors of the guideline identified 1,933 abstracts, which yielded 120 articles. Application of appropriate inclusion/exclusion criteria yielded 74 articles that provided the evidence for this parameter.

NUMBER OF SOURCE DOCUMENTS

74

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Classification of Evidence

Class I. Evidence provided by one or more well-designed, randomized, controlled clinical trials, including overviews (meta-analyses) of such trials.

Class II. Evidence provided by well-designed, observational studies with concurrent controls (e.g., case control or cohort studies).

Class III. Evidence provided by expert opinion, case series, case reports, and studies with historical controls.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Data extraction items. Articles were reviewed by at least two individuals and selected items were coded onto a data extraction form that had the following information: type of article, focus of article (e.g., diagnosis of dementia, early dementia), number of subjects, sex, subject selection method, method of patient characterization, screening instruments used, final diagnostic classification, gold standard for final diagnostic classification, quality of diagnostic methods, formal diagnostic criteria used, diagnostic criteria for Alzheimer´s disease (if applicable), age of population studied (if study dealt with test or instrument), name and value, sensitivity, specificity, positive predictive value, negative predictive value, and final classification of evidence.

Classification of evidence. Each article was assigned to a class of evidence based on a priori definitions. The class of evidence determined whether or not study results were ultimately translated into Standards, Guidelines, or Options.

Development of evidence tables. For all articles, evidences tables were developed. These tables indicate the author and year of the study, level of evidence, main purpose of the study, population, intervention, outcome measure, and result.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Levels of Recommendation

Standard. Principle for patient management that reflects a high degree of clinical certainty. (Usually requires Class I evidence that directly addresses clinical questions, or overwhelming Class II evidence when circumstances preclude randomized clinical trials.)

Guideline. Recommendation for patient management that reflects moderate clinical certainty. (Usually requires Class II evidence or a strong consensus of Class III evidence.)

Option. Strategy for patient management for which clinical utility is uncertain (inconclusive or conflicting evidence or opinion).

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guidelines were approved by the American Academy of Neurology Quality Standards Subcommittee on November 11, 2000, by the American Academy of Neurology Practice Committee on January 6, 2001, and by the American Academy of Neurology Board of Directors on February 24, 2001.

<div style="background-color:teal; color:white; text-align:center; padding:4px;">RECOMMENDATIONS</div>

MAJOR RECOMMENDATIONS

Classification of evidence ratings, I-III, and the levels of recommendations (Standard, Guideline, Option) are defined at the end of the "Major Recommendations" field.

1. Does the presence of mild cognitive impairment predict the development of dementia?

    Conclusion: Studies indicate that individuals characterized as being cognitively impaired but not meeting clinical criteria for dementia or Alzheimer's disease (mild cognitive impairment) have a high risk of progressing to dementia or Alzheimer's disease. If the figures for incident Alzheimer's disease from the general population are used (Table 4 in the original guideline document), one can see that the rates range from 0.2% in the 65 to 69 year age rage to 3.9% in the 85 to 89 year range. The studies of

mild cognitive impairment indicate that the rate of progression to dementia of Alzheimer's disease is between 6 and 25% per year.

Practice Recommendation: Patients with mild cognitive impairment should be recognized and monitored for cognitive and functional decline due to their increased risk for subsequent dementia (Guideline).

2. Does screening at-risk subjects with a specific instrument in a specific setting accurately lead to the diagnosis of dementia?

General Cognitive Screening Instruments

Conclusion: General cognitive screening instruments, which include the Mini-Mental State Examination, Kokmen Short Test of Mental Status, 7-Minute Screen, and Memory Impairment Screen, are useful for the detection of dementia when used in patient populations with an elevated prevalence of cognitive impairment either due to age or presence of memory dysfunction.

Practice Recommendation: General cognitive screening instruments (e.g., Mini-Mental State Examination) should be considered for the detection of dementia in individuals with suspected cognitive impairment (Guideline).

Brief Focused Screening Instruments

Conclusion: Recently, attempts have been made to develop useful screening tools that can be administered in a brief time frame. Caution must be exercised because of the limited scope of these tools.

Practice Recommendation: Brief cognitive assessment instruments that focus on limited aspects of cognitive function (i.e., Clock Drawing Test, Time and Change Test) may be considered when screening patients for dementia (Option).

Neuropsychologic Batteries

Conclusion: Neuropsychologic batteries are useful instruments in identifying patients with dementia, particularly when administered to an increased-risk (by virtue of memory impairment) population. Those neuropsychologic instruments that emphasize memory function are most useful.

Practice Recommendation: Neuropsychologic batteries should be considered useful in identifying patients with dementia, particularly when administered to a population at increased risk of cognitive impairment (Guideline).

Informant-based Batteries

Conclusion: Interview-based techniques (i.e., Blessed Dementia Rating Scale, Clinical Dementia Rating, Informant Questionnaire on Cognitive Decline in the Elderly) may be useful in identifying patients with dementia, particularly when administered to patients who are at increased risk of developing dementia by virtue of age or memory impairment. These instruments emphasize the

importance of obtaining information concerning the cognitive and functional status of persons from an informed source.

Practice Recommendation: Interview-based techniques may be considered in identifying patients with dementia, particularly in a population at increased risk for cognitive impairment (Option).

Definitions:

Classification of Evidence

Class I. Evidence provided by one or more well-designed, randomized, controlled clinical trials, including overviews (meta-analyses) of such trials.

Class II. Evidence provided by well-designed, observational studies with concurrent controls (e.g., case control or cohort studies).

Class III. Evidence provided by expert opinion, case series, case reports, and studies with historical controls.

Levels of Recommendation

Standard. Principle for patient management that reflects a high degree of clinical certainty. (Usually requires Class I evidence that directly addresses clinical questions, or overwhelming Class II evidence when circumstances preclude randomized clinical trials.)

Guideline. Recommendation for patient management that reflects moderate clinical certainty. (Usually requires Class II evidence or a strong consensus of Class III evidence.)

Option. Strategy for patient management for which clinical utility is uncertain (inconclusive or conflicting evidence or opinion).

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on a review of the literature. The type of supporting evidence is identified and graded for each recommendation on the early detection of dementia (see "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Improved detection of dementia in persons with signs of mild cognitive impairment

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This statement is provided as an educational service of the American Academy of Neurology. It is based on an assessment of current scientific and clinical information. It is not intended to include all possible proper methods of care for a particular neurologic problem or all legitimate criteria for choosing to use specific procedures. Neither is it intended to exclude any reasonable alternative methodologies. The American Academy of Neurology recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, based on all the circumstances involved.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

RELATED QUALITY TOOLS

- American Academy of Neurology (AAN) Guideline Summary for Clinicians: Detection, Diagnosis and Management of Dementia

- American Academy of Neurology (AAN) Guideline Summary for Patients and Their Families: Alzheimer's Disease

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: Guideline was not adapted from another source.

DATE RELEASED

2001 May

GUIDELINE DEVELOPER(S)

American Academy of Neurology - Medical Specialty Society

SOURCE(S) OF FUNDING

American Academy of Neurology (AAN)

GUIDELINE COMMITTEE

Quality Standards Subcommittee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: R.C. Petersen, PhD, MD; J.C. Stevens, MD; M. Ganguli, MD, MPH; E.G. Tangalos, MD; J.L. Cummings, MD; and S.T. DeKosky, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All panel members provided comprehensive disclosures of any real or potential conflicts of interest.

ENDORSER(S)

American Association of Neuroscience Nurses - Professional Association
American Geriatrics Society - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Academy of Neurology (AAN) Web site.

Print copies: Available from the AAN Member Services Center, (800) 879-1960, or from AAN, 1080 Montreal Avenue, St. Paul, MN 55116.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- AAN guideline summary for clinicians: detection, diagnosis and management of dementia. St. Paul (MN): American Academy of Neurology, 2001. Electronic copies: Available from the American Academy of Neurology (AAN) Web site.
- AAN guideline development process. St. Paul (MN): American Academy of Neurology. Electronic copies: Available from the AAN Web site.

PATIENT RESOURCES

The following is available:

- AAN guideline summary for patients and their families: Alzheimer's disease guidelines. St. Paul (MN): American Academy of Neurology. 4 p.

Electronic copies: Available in Portable Document Format (PDF) from the American Academy of Neurology (AAN) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This NGC summary was completed by ECRI on February 12, 2002. The information was verified by the guideline developer on September 22, 2003.

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